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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/561,926	12/22/2005	Akira Kurozuka	2005_1641A	3215

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EXAMINER	
BIBBINS, LATANYA	

ART UNIT	PAPER NUMBER
2627	

NOTIFICATION DATE	DELIVERY MODE
10/01/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/561,926	Applicant(s) KUROZUKA ET AL.	
	Examiner LATANYA BIBBINS	Art Unit 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 29-32 and 38-56 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 29-32 and 38-56 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 30, 2010 has been entered.

2. In the remarks filed on June 7, 2010, Applicant amended claims 29, 31, 52 and 54 and submitted arguments for allowability of pending claims 29-32 and 38-56.

Response to Arguments

3. Applicant's arguments filed June 7, 2010 have been fully considered but they are not persuasive.

Applicant argues that Maruyama does not teach that the permanent magnet can be demagnetized and that it would therefore be necessary to apply constant electric current to the coil to maintain the electromagnetic force needed to change/maintain the form of the variable mirror in contrast to the claimed invention which requires that the hard magnetic member apply a current through the magnetizing coil only when the reflection mirror is switched between the deformed state and the non-deformed state.

With regard to Applicant's argument that Maruyama does not disclose that the permanent magnet is magnetized or demagnetized and therefore it is necessary to

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apply a constant electric current to the coil to maintain the electromagnetic force need to change the form of the variable mirror, Examiner respectfully disagrees. By definition, a permanent magnet retains magnetism after being magnetized by electrical current.

Maruyama discloses a deformable mirror able to change to flat, convex and concave surfaces (see the discussion in paragraph [0017]). In paragraphs [0036], [0037] and [0039] Maruyama further discloses applying "switchable current" and "current of different quantities" to the coils in order to deform the mirror to the desired shape.

Maruyama also teaches that the direction of the current can be changed to achieve the desired surface. Since the permanent magnet retains magnetism after being magnetized by electrical current, in order for the mirror to change to either flat, convex, or concave after application of an electrical current, the permanent magnet must be demagnetized.

In addition, in the arguments filed June 7, 2010, Applicant asserts that it is the hard magnetic member that applies a current through the magnetizing coil. Examiner respectfully disagrees. As outlined in the 35 U.S.C. 112 first paragraph rejection below, the specification fails to disclose that the hard magnetic member applies the current through the magnetizing coil. Instead, the specification discloses that a current is passed through the switching device (which includes a hard magnetic member and a magnetizing member) by means of a driving circuit (see page 18 lines 16-21 of the specification). The specification additionally discloses that a magnetizing coil is wound around the hard magnetic member and current is passed through the magnetizing coil which generates a magnetic field thereby magnetizing or demagnetizing the hard

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magnet member (see the discussion on page 25 lines 15 – 24). Therefore, Examiner submits that it is the driving circuit which applies current through the magnetizing coil and not the hard magnetic member as stated by Applicant and recited in the claims.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. **Claims 29-32 and 38-56 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement.**

The claims contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention. New or amended claims which introduce elements or limitations which are not supported by the as-filed disclosure violate the written description requirement. See MPEP § 2163 I(B).

In the amendment filed June 7, 2010, independent claims 29, 52 and 54 were amended to include the limitation “wherein the hard magnetic member applies a current through the magnetizing coil only when the reflection mirror is switched between the deformed state and the non-deformed state.” While the specification discloses passing a current through the magnetizing coil only when the reflection mirror is switched between the deformed state and the non-deformed state, the specification fails to

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disclose that the hard magnetic member applies the current through the magnetizing coil. Instead, the specification discloses that “a current is passed through the switching device by means of a driving circuit” (see page 18 lines 16-21 of the specification) and the switching device includes a hard magnetic member and a magnetizing member (see page 25 lines 6-8 of the specification). The specification additionally discloses that a magnetizing coil is wound around the hard magnetic member and current is passed through the magnetizing coil which generates a magnetic field thereby magnetizing or demagnetizing the hard magnet member (see the discussion on page 25 lines 15 – 24).

Therefore, the claimed limitation “wherein the hard magnetic member applies a current through the magnetizing coil only when the reflection mirror is switched between the deformed state and the non-deformed state” of amended claims 29, 52 and 54 is not supported by the as-filed disclosure, and the written description requirement is violated.

Allowable Subject Matter

6. Regarding claims 29-32 and 38-56, while a search has been performed, taking into consideration the new mater as part of the claimed subject matter, no statement will be made in this Office Action regarding the allowability over the prior art due to the 35 U.S.C. 112 first paragraph rejections noted above. Examiner will refrain from making a prior art rejection until the intended patentable coverage of the invention is made clear by Applicant.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LATANYA BIBBINS whose telephone number is (571)270-1125. The examiner can normally be reached on Monday through Friday 7:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on 571 272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/LaTanya Bibbins/
Examiner, Art Unit 2627